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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,282	06/30/2004	Isaac Zolotarev	81101089 / FMC 1761 PUSP	4281
28395 7590 10/18/2007 BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			EXAMINER HONG, JOHN C	
			ART UNIT 3726	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/710,282

Applicant(s)

ZOLOTAREV ET AL.

Examiner

JOHN C. HONG

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 15-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

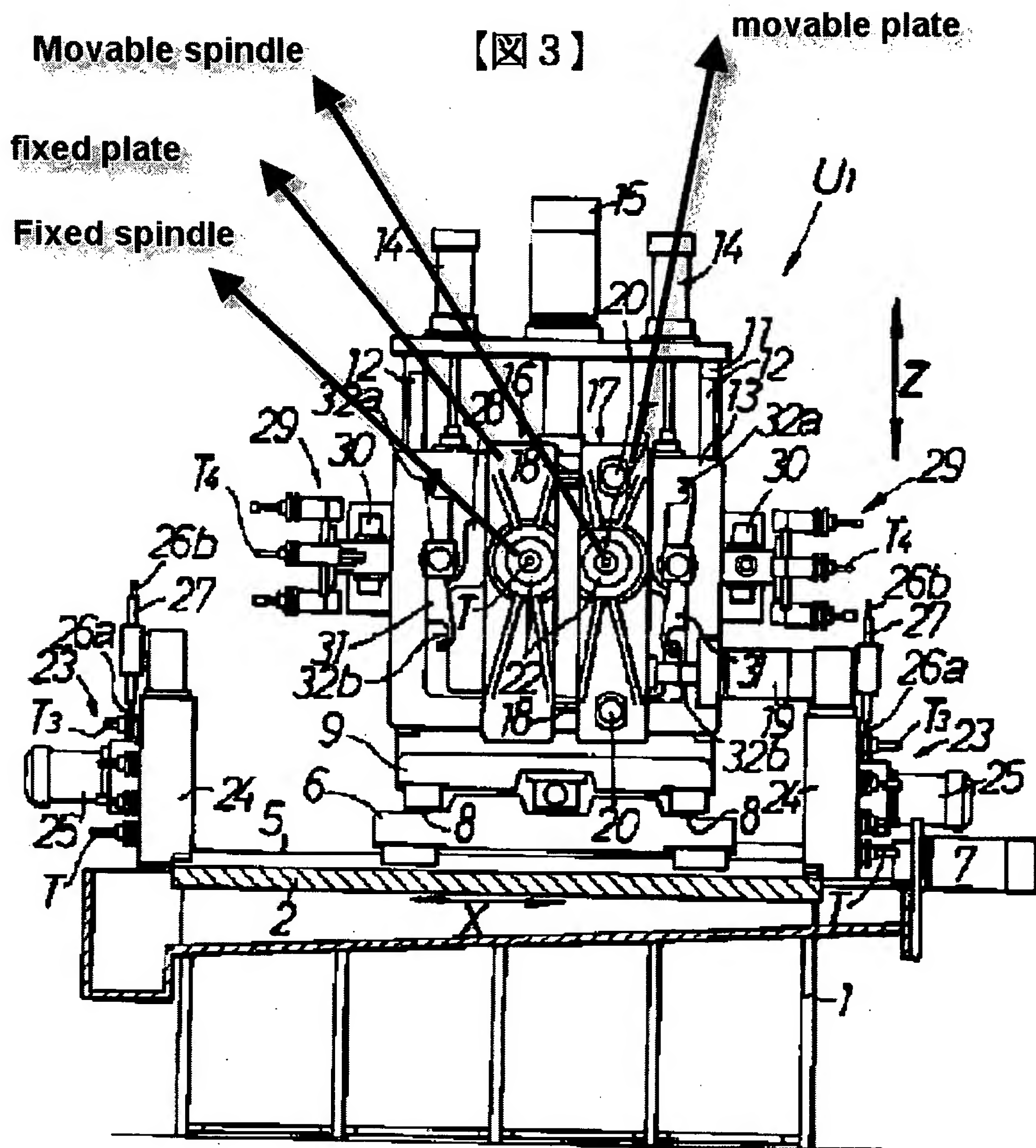
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 40424003 in view of Kimura (U.S. Patent 4741078).

Regarding Claim(s) 1, '037 teaches a spindle positioning apparatus comprising: a mounting plate assembly (2); a first spindle disposed on the mounting plate assembly in a fixed position; a second spindle disposed on the mounting plate assembly and movable with respect to the first spindle; and an actuator mechanism (As the movable spindle moved as seen on the attached Fig 3, there should be an actuator mechanism) adapted to position the second spindle with respect to the first spindle (Figs 2 and 3 ; Abstract).

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'037 fails to teach a spindle positioning apparatus for a robotic manipulator.

Kimura teaches a robotic manipulator. (Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to attach the spindle positioning apparatus of '037 on the robotic manipulator, as taught by Kimura so as to achieve accuracy of repetition and high efficiency.

** A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Regarding Claim(s) 2, '037 teaches the mounting plate assembly includes a fixed plate adapted to receive the first spindle and a movable plate adapted to receive the second spindle and movably attached to the fixed plate (See attached Fig. 3).

Regarding Claim(s) 3, '037 teaches the first spindle extends through the fixed plate and the second spindle extends through the movable plate (See attached Fig. 3).

Regarding Claim(s) 4, '037 teaches the actuator mechanism is disposed proximate the mounting plate assembly (See attached Fig. 3).

Regarding Claim(s) 7, regarding the limitation of distance between the 1st and 2nd axes of rotation is in the range of 75 mm to 1400 mm, It would have been obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to construct the apparatus of '037 with the distance between the 1st and 2nd axes of rotation is in the range of 75 mm to 1400 mm, because Applicant has not disclosed that the distance of 75 mm to 1400 mm provides an advantage, is used for a particular purpose, or solves a stated problem. One of

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ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the structure of the '037's apparatus because it would perform the drilling.

Regarding Claim(s) 8, '037 teaches the first spindle is adapted to rotate about a first axis of rotation, the second spindle is adapted to rotate about a second axis of rotation, and the first and second axes of rotation are disposed parallel each other (See the attached Fig. 3).

3. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over '037/Kimura as applied to claim 1 above, and further in view of Otani et al. (U.S. Patent 5205805).

Regarding Claim(s) 5, '037/Kimura teach the limitation except the actuator mechanism further, comprises a ball screw assembly having a ball nut and a ball screw, and a servo motor adapted to rotate the ball screw to actuate the ball nut.

Otani et al. teach the actuator mechanism further, comprises a ball screw assembly having a ball nut (25) and a ball screw, and a servo motor (24) adapted to rotate the ball screw to actuate the ball nut (Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the actuator mechanism further, comprises a ball screw assembly having a ball nut and a ball screw, and a servo motor adapted to rotate the ball screw to actuate the ball nut, as taught by Otani et al. on the apparatus of '037/Kimura so as to move the spindle to a desired position

Regarding Claim(s) 6, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to attach the ball nut of Otani et al. to the movable plate of '037

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and attach the ball screw of Otani et al. to the fixed plate of '037 so as to move the spindle to a desired position.

4. Claims 9,10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP404240037.

Regarding Claim(s) 9, '037 teaches a multi-spindle positioning assembly comprising: a spindle positioning apparatus including: a first mounting plate and having a first opening; a second mounting plate movably attached to the first mounting plate and having a second opening; a first spindle extending through the first opening and attached to the first mounting plate; a second spindle extending through the second opening and attached to the second mounting plate; and an actuator mechanism adapted to position the second spindle with respect to the first spindle (See the above attached Fig. 3; Abstract).

'037 fails to teach a multi-axis robot having a manipulator arm; and a mounting plate attached to the manipulator arm.

Kimura teaches a multi-axis robot having a manipulator arm; and a mounting plate attached to the manipulator arm.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to attach the apparatus of '037 to a multi-axis robot having a manipulator arm; and a mounting plate attached to the manipulator arm, as taught by Kimura so as to achieve accuracy of repetition and high efficiency.

** A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

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Regarding Claim(s) 10, '037 teaches a track disposed proximate the first mounting plate and adapted to movably receive the second mounting plate (Fig. 3).

Regarding Claim(s) 14, '037 teaches the first and second spindles include first and second tools, respectively, each adapted to engage a threaded part (Fig. 3).

5. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over '037/Kimura as applied to claim 9 above, and further in view of Otani et al. (U.S. Patent 5205805).

Regarding Claim(s) 11, '037/Kimura fail to teach the actuator mechanism further comprises a ball screw assembly having a ball nut and a ball screw, and a servo motor adapted to rotate the ball screw to actuate the ball nut.

Otani et al. teach the actuator mechanism further comprises a ball screw assembly having a ball nut (25) and a ball screw, and a servo motor (24) adapted to rotate the ball screw to actuate the ball nut (Fig. 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to utilize the actuator mechanism further comprises a ball screw assembly having a ball nut and a ball screw, and a servo motor adapted to rotate the ball screw to actuate the ball nut, as taught by Otani et al. on the apparatus of '037/Kimura so as to move the spindle to a desired position.

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Regarding Claim(s) 12, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to attach the ball nut of Otani et al. to the movable plate of '037 and attach the ball screw of Otani et al. to the fixed plate of '037 so as to move the spindle to a desired position.

Regarding Claim(s) 13, regarding the limitation of distance between the 1st and 2nd axes of rotation is in the range of 75 mm to 1400 mm, It would have been obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to construct the apparatus of '037 with the distance between the 1st and 2nd axes of rotation is in the range of 75 mm to 1400 mm, because Applicant has not disclosed that the distance of 75 mm to 1400 mm provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the structure of the '037's apparatus because it would perform the drilling.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN C. HONG whose telephone number is 571-272-4529. The examiner can normally be reached on M-F 9:00-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID BRYANT can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JOHN C HONG
Primary Examiner
Art Unit 3726

jh
10/14/07